

AN **ADVANCE** BALLAST FOR ALL TYPES OF FLUORESCENT LIGHTING



*The First Name
in Fluorescent Ballasts*

**ADVANCE
TRANSFORMER
CO.**

1122 W. CATALPA AVE., CHICAGO 40, ILL., U.S.A.

CABLE ADDRESS: ADTRANS

BALLASTS FOR ALL TYPES OF FLUORESCENT LIGHTING



UNION
MADE

CERTIFIED



Single
32 watt
ballasts

For 1-32 watt lamp. Typical of auto-transformer type ballasts used from 30 watts to 40 watts. Narrow cross section for small size channels.



2-40 watt
ballasts

Narrow cross section double auto transformer for two 40 watt lamps. High power factor. Stroboscopic corrected. Also same size can houses series-sequence instant start ballasts for 2-40 watt lamps. For outdoor use specify cold weather construction.

Advance Transformer Company of Chicago produces a complete line of fluorescent ballasts... from the tiny 4 watt to 85 watt hot cathode lamps... to the 75 watt 96" T-12 instant start lamp. Case styles are standardized to conform with industry practice and can be installed with the minimum of effort. Designs are available for unusual circumstances and rarely used sizes such as the 13 watt lamp.

Highest standards are employed throughout the Advance line to insure maximum value per dollar. All ballasts are designed and produced in accordance with the published lamp standards and to meet the new ASA and Underwriters Laboratories specifications.

Thorough multi-point inspection at every stage of production insures performance, dependability and compliance with the most rigid demands of every quality standard.

ADVANCE CONSTRUCTION

Quiet operation is assured with Advance Ballasts due to the method of riveting shell type units, minimizing noise during service. Leakage and stray flux which may cause fixture vibration is eliminated by avoiding saturation of the magnetic circuit.

Fig. 1 shows a typical core and shell of a standard brick type unit. All points of magnetic stress are securely riveted. After assembly the entire unit is vacuum impregnated in thermal setting phenolic varnish which has excellent bonding and electrical characteristics. This assures trouble-free operation and long, efficient service.

To insure rapid heat conductivity and the consistency necessary to dampen vibration and noises, a filler compound is used with a high percentage of silica. This material, by complete and careful filling of each unit seals out moisture and increases insulation resistance. Ballast housings are constructed of die-formed or drawn heavy gauge sheet steel so arranged that all vital parts are protected from entrance of moisture by the filling compound.

CONSTANT LABORATORY INSPECTION

A modern laboratory is maintained on our premises to insure that only the finest materials of the proper characteristics are used. A continuous "accelerated life test" of vital materials maintains unvarying quality. All components are rigidly checked. Insulating papers must be acid-free and have no corrosive ingredients. Lead wire is carefully selected to stand up under temperature and voltage, plus the ability to withstand maximum abuse in assembly and installation.

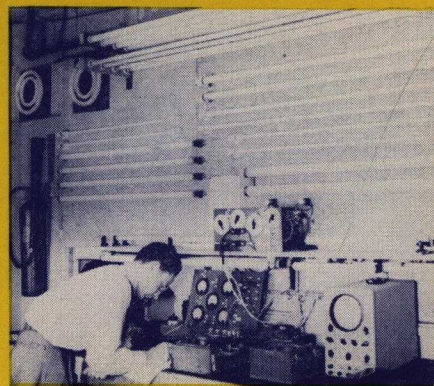
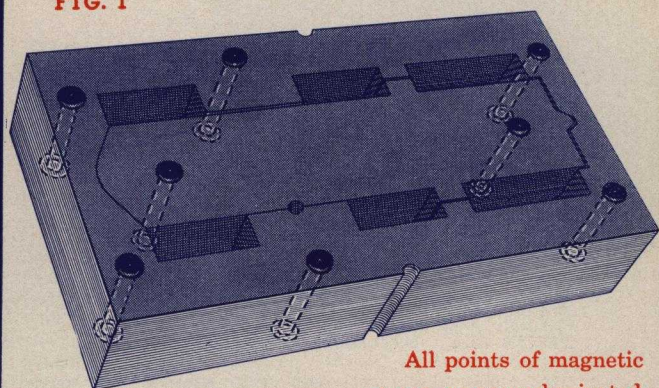


FIG. 1



All points of magnetic
stress are securely riveted.

THE FLUORESCENT BALLAST

Fluorescent lamps require a stabilizing device known as a "Ballast" connected between the lamp and the power supply to limit current to the proper value. Unlike the incandescent lamp, which has a filament to produce light and limit current to safe values, the fluorescent lamp has a gaseous arc discharge which is unstable. This current, without a "ballast" would have a tendency to increase until some part of the lamp would be destroyed; and the ballast therefor limits the current.

In addition to the current-limiting function, ballasts may also increase or decrease the lamp ignition voltage for satisfactory starting.

STROBOSCOPIC CORRECTION

A fluorescent lamp emits light in accordance with the amount of current flowing through. Sixty cycle current rises and falls 120 times per second. Each time the current passes through zero there is a diminution of light output. Rapidly moving objects often have the optical illusion of slowing down when a variation of light occurs under certain circumstances. This is known as a "stroboscopic effect." To eliminate this effect the two-lamp stroboscopic corrected ballast is used with the rise and fall of current in each lamp "straddling" the other. The pair of lamps then cast a relatively constant light output upon the surface to be illuminated.

RADIO INTERFERENCE

Radio interference filters are incorporated in all instant start ballasts. Their size and position in the circuit is based upon latest available data for maximum effectiveness.

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*The
Better
Ballast*

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DESIGNED TO LAMP MANUFACTURERS' SPECIFICATIONS

31a
Ad

All lamp characteristics are taken into consideration and checked item by item in our complete line of ballasts. Lamp starting current, ignition voltage and operating current are held to close tolerances. Ballast operating temperatures are well within UL and ASA specifications. Continuous laboratory sampling guarantees that these elements remain unchanged.

The larger ballasts are certified by Electrical Testing Laboratories. All units, regardless of size are tested at every step during their manufacture.

Advance ballasts are designed to meet the requirements of the most highly competitive fixture and the quality-conscious buyer.

ADVANCE INSTANT START BALLASTS

Designed on a new principle to give better regulation, longer lamp life and greater lumen-per-watt output, lamp circuits are independent of each other so that *failure of one lamp does not affect the other*. Lamps are stroboscopic corrected.

PATENTED DESIGN SAVES WEIGHT

Because of patented construction, weight saving runs as high as 30% for the 96" T-12 2-lamp ballast at 430 m. a. These are the lightest ballasts available for independent stroboscopic corrected lamp operation.

LOWER WATT LOSSES

Watt losses are reduced 15% to 25% against competitive conventional lead-lag (stroboscopic corrected) ballasts. This means higher efficiency and greater lumen output per watt input. Fixture heat is reduced with savings for air conditioning, etc.

SPECIAL CIRCUIT GIVES BETTER REGULATION

Fig 2 shows regulation curves of ballasts for 2-96 inch T-12 lamps at 430 m. a.

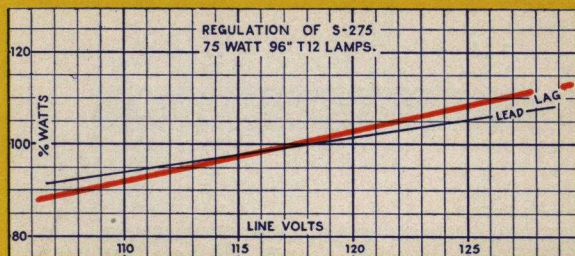


FIG. 2

LONGER LAMP LIFE ASSURED

Every step is taken to maintain lamp current wave shape as close to sinusoidal as possible, thus assuring longer life. Advance instant start stroboscopic corrected ballasts are manufactured with crest factors averaging not more than 1.5 (crest factor is the ratio of peak to RMS current and is 1.414 for a perfect sine wave). Laboratory tests indicate that ballasts with crest factors of 1.7 to 1.85 with very high peak currents shorten lamp life. There is also evidence that the lumen-per-watt output of the lamp decreases with higher crest factors.

SERIES-SEQUENCE

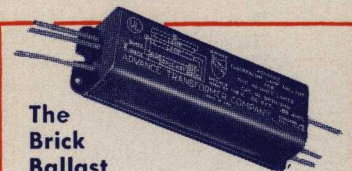
Individual lamp ballasting has been a common, practical method in multiple lamp fixtures but weight has been an obstacle in certain installations. The new "Series-Sequence" type ballast starts a 2-lamp fixture one lamp at a time, operates them in series and has the advantage of lower weight. However, each lamp is dependent upon the proper function of the second lamp in the series. Since the lamps are in series they are not stroboscopic corrected. These disadvantages are not present in our independent lamp operated ballasts.

Through its engineering leadership, Advance Transformer Co., has developed a circuit for this type ballast which is recognized as foremost in the field. Series-Sequence ballasts are available in addition to our standard line of multiple lamp ballasts.



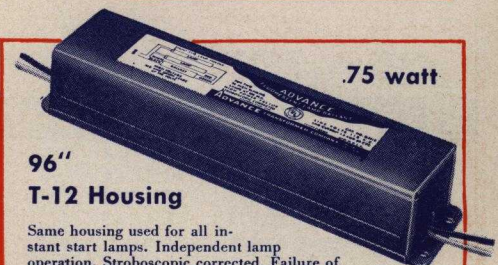
UNION
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The
Brick
Ballast

Standard Brick type construction for two 40 watt lamps. High power factor—stroboscopic corrected. Houses series-sequence instant start ballast. Also H.P.F. instant start 1-40 watt lamp.



96"
T-12 Housing

Same housing used for all instant start lamps. Independent lamp operation. Stroboscopic corrected. Failure of one lamp does not affect light output of second lamp as in series-sequence.

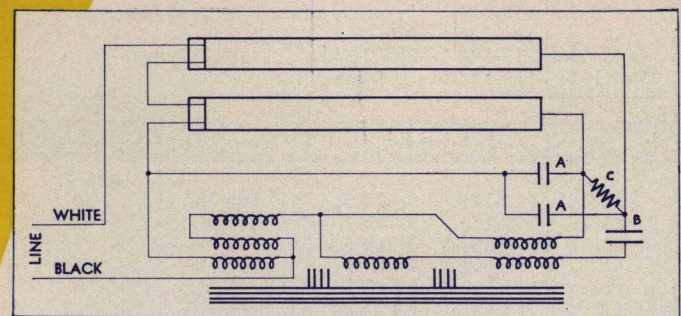


FIG. 3 A-A: Filter condenser. B: Stroboscopic and power factor correcting condenser. C: Bleeder resistor to prevent electric shock and condenser damage.

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**ADVANCE
TRANSFORMER
COMPANY**

ADVANCE TRANSFORMER COMPANY

1122 WEST CATALPA AVENUE

CHICAGO 40, ILL.

PHONE LONGBEACH 1-4600

FLUORESCENT BALLASTS



CATALOG DATA and INFORMATION CHART

Approx. Lamp Watts	Circuit Voltage	Catalog Number	Dimensions See Diagram Figure No.	Units Std. Pkg.	Wt. Std. Pkg.				
UNCORRECTED POWER FACTOR BALLASTS			Single Lamps 60 Cycles						
			A Length	B Width	C Height	D Mfg.	Fig. No.		
4	110-125	RSLO-104 (Open Type) (For use with G4-S11 or WL-794 Lamps)						60	58
4	110-125	FSL-104	4-1/4	1-59/64	1-7/16	3-7/8	1	50	38
6	110-125	RSL-106	4-1/4	1-59/64	1-7/16	3-7/8	1	50	45
8	110-125	RSL-108	4-1/4	1-59/64	1-7/16	3-7/8	1	50	45
13	110-125	RSL-113	6-7/8	2-1/8	1-5/8	6-3/8	1	20	45
14	110-125	RSL-114	4-1/4	1-59/64	1-7/16	3-7/8	1	50	45
15	110-125	L-115	4-1/4	1-59/64	1-7/16	3-7/8	1	50	45
20	110-125	L-120	4-1/4	1-59/64	1-7/16	3-7/8	1	50	45
20	110-125	LQ-120 (Quick Start)	6-7/8	2-1/8	1-13/16	6-3/8	1	20	60
25	110-125	RSL-125	4-3/4	2-1/8	1-9/16	4-3/8	1	30	49
30	110-125	RSL-130	6-7/8	2-1/8	1-5/8	6-3/8	1	20	53
40	110-125	L-140	6-7/8	2-1/8	1-5/8	6-3/8	1	20	53
32	110-125	L-132 (Circline)	6-7/8	2-1/8	1-5/8	6-3/8	1	20	51
32	110-125	LQ-132 (Quick Start Circline)	6-7/8	2-1/8	1-13/16	6-3/8	1	20	60
4 Watt, 6 Watt, 8 Watt, 14 Watt, and 15 Watt units may be obtained in:									
	110-125	OPEN TYPE						105	53
	110-125	PLUG-IN TYPE						30	27
	110-125	PLUG-THRU TYPE						30	27



UNCORRECTED POWER FACTOR BALLASTS Multiple Lamps 60 Cycles									
14	110-125	*RSL-2S14	4-1/4	1-59/64	1-7/16	3-7/8	1	50	50
15	110-125	L-215	6-1/4	1-59/64	1-7/16	5-5/8	1	30	50
20	110-125	L-220	6-1/4	1-59/64	1-7/16	5-5/8	1	30	50
20	110-125	* LQ-220 (Quick Start)	6-7/8	2-1/8	1-13/16	6-3/8	1	20	60
25	110-125	RSL-225	6-7/8	2-1/8	1-5/8	6-3/8	1	20	51

HIGH POWER FACTOR BALLASTS					Single Lamps 60 Cycles				
15	110-125	RSH-115	9-9/16	2-23/64	1-5/8	8-11/16	1	20	42
20	110-125	RSH-120	9-9/16	2-23/64	1-5/8	8-11/16	1	20	42
30	110-125	RSH-130	11-3/4	2-17/64	1-5/8	11-3/8	1	10	48
40	110-125	RSH-140	11-3/4	2-17/64	1-5/8	11-3/8	1	10	48

HIGH POWER FACTOR		(STROBOSCOPIC CORRECTED)	BALLASTS			Multiple Lamps 60 Cycles			
15	110-125	RSH-215	11-3/4	2-17/64	1-5/8	11-3/8	1	10	48
20	110-125	RSH-220	11-3/4	2-17/64	1-5/8	11-3/8	1	10	48
30	110-125	RSH-230	17-1/8	2-23/64	1-5/8	16-3/16	1	10	53
40	110-125	S-240 (Narrow Cross Section)	17-1/8	2-23/64	1-5/8	16-3/16	1	10	53
40	110-125	S-240-235 (Narrow Cross Section)	11-3/4	2-17/64	1-5/8	11-3/8	1	10	50
40	110-125	RSH-240	18-1/4	2-23/64	1-7/8	17-7/16	1	10	66
40	110-125	BRSH-240 Brick Type)	9-1/2	3-3/16	2-3/8	8-15/16	2	10	72
85 or 100	110-125	S-285	14-1/4	3-3/16	2-9/16	13-11/16	2	4	50



SLIMLINE BALLASTS FOR INSTANT STARTING LAMPS											
HIGH POWER FACTOR BALLASTS								Single Lamps 60 Cycles			
				Lamp							
38	110-125	S-138-S	200 MA	72" T8	14-1/4	3-3/16	2-9/16	13-11/16	2	4	50
51	110-125	S-151-T	300 MA	72" T8	14-1/4	3-3/16	2-9/16	13-11/16	2	4	50
60	110-125	S-160-S	430 MA	72" T12	14-1/4	3-3/16	2-9/16	13-11/16	2	4	50
51	110-125	S-151-S	200 MA	96" T8	14-1/4	3-3/16	2-9/16	13-11/16	2	4	50
69	110-125	S-169-S	300 MA	96" T8	14-1/4	3-3/16	2-9/16	13-11/16	2	4	50
75	110-125	S-175-S	430 MA	96" T12	14-1/4	3-3/16	2-9/16	13-11/16	2	4	50

HIGH POWER FACTOR			(STROBOSCOPIC CORRECTED)	BALLASTS			Multiple Lamps 60 Cycles			
40	110-125	*† INS-240 430 MA (Narrow Cross Section)	48" T12	17-1/8	2-23/64	1-7/8	16-3/16	1	10	58
40	110-125	*‡ BINS-240 (Brick)	48" T12	9-1/2	3-1/16	2-1/8	8-15/16	2	10	58
40	110-125	SI-240 430 MA	48" T12	14-1/4	3-3/16	2-9/16	13-11/16	2	4	50
38	110-125	S-238-S 200 MA	72" T8	14-1/4	3-3/16	2-9/16	13-11/16	2	4	50
51	110-125	S-251-T 300 MA	72" T8	14-1/4	3-3/16	2-9/16	13-11/16	2	4	50
60	110-125	S-260-S 430 MA	72" T12	14-1/4	3-3/16	2-9/16	13-11/16	2	4	60
51	110-125	S-251-S 200 MA	96" T8	14-1/4	3-3/16	2-9/16	13-11/16	2	4	50
69	110-125	S-269-S 300 MA	96" T8	14-1/4	3-3/16	2-9/16	13-11/16	2	4	60
75	110-125	S-275-S 430 MA	96" T12	14-1/4	3-3/16	2-9/16	13-11/16	2	4	60
75	* 110-125	INS-275-S 430 MA *	96" T12	14-1/4	3-3/16	2-9/16	13-11/16	2	4	50

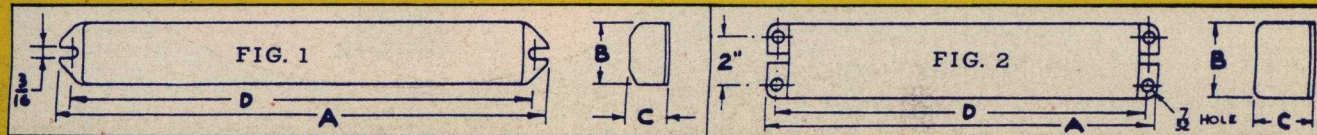
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*Series type not stroboscopic corrected

† or 64" T6

† For cold weather use, add CW to Cat. No.



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